

GENERIC NAME:

DOPAMINE

112.11

BRAND NAME: Intropin

CLASS: sympathomimetic

Mechanism of Action:

Immediate metabolic precursor to norepinephrine

Effects are dose-dependent:

1-2 $\mu\text{g/kg/min}$	Acts on dopaminergic receptors to stimulate cerebral, renal and mesenteric vasculature to dilate; HR and B/P are usually unchanged; may increase urine output
2-10 $\mu\text{g/kg/min}$	β_1 stimulant action is primary effect (increases cardiac output and partially antagonizes the α -adrenergic-mediated vasoconstriction. Overall effect is increased cardiac output and only modest increase in systemic vascular resistance (SVR)
10-20 $\mu\text{g/kg/min}$	α -adrenergic effects predominate resulting in renal, mesenteric and peripheral arterial and venous vasoconstriction with marked increase in SVR, pulmonary vascular resistance and further increased preload
> 20 $\mu\text{g/kg/min}$	Produces hemodynamic effects similar to norepinephrine; may increase HR and O_2 demand to undesirable limits

Indications and Field Use:

Symptomatic bradycardias.

Hemodynamically significant hypotension in the absence of hypovolemia (Cardiogenic or septic shock **only** after fluid administration; assess breath sounds first).

Contraindications:

Hypovolemic shock (relative)

Pheochromocytoma

MAO inhibitors, such as Marplan, Nardil, or Parnate

Adverse Reactions:

CV: Cardiac arrhythmias may occur due to increased myocardial oxygen demand (usually tachydysrhythmias), hypertension, hypotension at low doses.

GI: Nausea and vomiting

GU: Renal shutdown (at higher doses)

Other: Extravasation may cause tissue necrosis

NOTES ON ADMINISTRATION

GD-039-PHS-EMS: Drug Profile for Dopamine

Incompatibilities/Drug Interactions:

Incompatible in any alkaline solution
On-board MAO inhibitors will cause hypertensive crisis

Adult Dosage: (dosage range 2-20 $\mu\text{g/kg/min}$)

Preparation: (If premixed not carried) Add 400 mg/ 250 ml NS or Dextrose = 1600 $\mu\text{g/ml}$.

Bradycardia: Start at 5 $\mu\text{g/kg/min}$

Shock: cardiogenic or septic (non-hypovolemic)

BP < 70 systolic: Start drip at 5 $\mu\text{g/kg/min}$

BP > 70 systolic: Start drip at 2.5 $\mu\text{g/kg/min}$

Pediatric Dosage:

2-20 $\mu\text{g/kg/min}$ for circulatory shock or shock unresponsive to fluid administration. To prepare infusion for small children: 6 x body wt. in kg = mg added to NS to make 100 ml. With this mixture 1 ml/hr delivers 1 $\mu\text{g/kg/min}$; titrate to effect.

Routes of Administration:

IV infusion
Infusion pump required on interfacility transfers

Onset of Action:

Almost immediate, upon presentation to central circulation

Peak Effects:

5-10 minutes

Duration of Action:

Effects cease almost immediately when infusion is shut off

Dosage Forms/Packaging:

400 mg/5 ml vials
400 mg in 250 ml D₅W premixed IV solution

Arizona Drug Box Supply Range:

PARAMEDIC and QUALIFIED IEMT: 1 - 2
INTERMEDIATE: 0

Special Notes:

- > Always monitor drip rate, **never** run "wide open".
- > An infusion pump is required for interfacility transports; a minimum of microdrip tubing is required for field use.
- > It is important to remember that even in low dose ranges dopamine elevates pulmonary artery occlusive pressure and may induce or exacerbate pulmonary congestion despite a rise in cardiac output.
- > Notify physician if infusion infiltrates for administration of antidote.